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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/910,968	07/23/2001	Brigitte Benage	0036-PA	2557

7590 08/23/2005

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EXAMINER

NGUYEN, TAM M

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 08/23/2005

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/910,968
Filing Date: July 23, 2001
Appellant(s): BENAGE ET AL.

James L. Lewis
For Appellant

EXAMINER'S ANSWER

MAILED
AUG 23 2005
GROUP 1700

This is in response to the appeal brief filed July 01 2005 appealing from the Office action
mailed January 25, 2005.

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(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

The following is a listing of the evidence (e.g., patents, publications, Official Notice, and admitted prior art) relied upon in the rejection of claims under appeal.

5,907,071	ARHANCET	5-1999
4,033,829	HIGGINS, et al.	7-1977

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 2, 9, and 17-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arhancet (5,907,071) in view of Higgins et al. (4,033,829).

Arhancet discloses a method for inhibiting premature polymerization of vinyl aromatic monomers. The monomers are distilled in the presence of nitroxyl inhibitors (2,2,6,6-tetramethyl-1-piperidinoxy) at a temperature of 110° C and under reduced vacuum. The formula of the inhibitor of Arhancet is the same as the claimed formula. (See col. 1, lines 16-17; col. 2, line 10 through col. 3, line 7; claims 6 and 8)

Higgins discloses a process for production/purification of an unsaturated monomer feedstock by contacting the feedstock with inhibitors in a distillation/separation zone to produce a product stream containing the inhibitor and the unsaturated monomer which is then recycled back to the distillation/separation zone. Higgins also discloses that the process is operated on either a continuous or batch basis at an overhead pressure of the distillation column of 414 mm Hg and the product stream contains by-product impurities such as polymers. (See abstract; col. 1, lines 46-64; col. 3, line 11 through col. 6, line 66)

Regarding claim 1, Arhancet does not disclose a step of recycling the inhibitor to the distillation column. However, Higgins discloses a process for production/purification of an unsaturated monomer wherein the inhibitor is recycled back to the distillation column (see the Figure). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Arhancet by recycling the inhibitor back

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to the distillation column as taught by Higgins because the recycling step would cut down the cost of fresh inhibitor.

Regarding claim 9, Arhancet does not specifically disclose that the distillation is a continuous operation. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Arhancet by operating the process continuously because Higgins teaches that similar results would be expected when the distillation is operated in either continuous or batch mode.

Regarding claim 18, Arhancet does not specifically disclose that the inhibitor is a blend of two nitroxyls. However, each of the nitroxyl-containing inhibitors of Arhancet has an equivalent function. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Arhancet by using a blend of two nitroxyls because it would be expected that the mixture of the two nitroxyls would have similar results as a single nitroxyl inhibitor.

(10) Response to Arguments

The argument that it is not obvious to combine the Arhancet process and the Higgins process because Higgins does not teach the use of nitroxyl-containing compounds, does not teach the difficulties encountered in using nitroxyl-containing compounds as inhibitors, and does not suggest the problems involved in using nitroxyl-containing compounds as inhibitor can be overcome by recycling a stream containing such inhibitors at temperature no higher than about 110° C and at a pressure below 760 mmHg is not persuasive. The examiner relied upon Higgins to teach that a spent inhibitor can be recycled for reuse. Also, as admitted by applicants (see page

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13, lines 20-22 of the present specification), it is known that the recycling of streams utilizing nitroxyls as polymerization inhibitors in plants employing temperatures in excess of about 115° C causes loss of inhibitor efficiency. Given the admission of applicant, the teaching of Higgins, and the operating conditions of Arhancet, which are similar to the claimed operation conditions, one of skill in the art would recycle the nitroxyl-containing inhibitor at the operated condition of Arhancet (at a temperature of 110° C and at a pressure below 760 mm Hg). When the recycling step is employed in the process of Arhancet, one of skill in the art would continually maintain the process of Arhancet at its desired temperatures, which is less 115° C, and it would be expected that the cause of loss of inhibitor efficiency would not be occurred.

The argument that Higgins teach that the distillation column is operated at an overhead pressure of 414 mm Hg which resulted in a bottoms temperature of approximately 131° C and this is precisely the kind of distillation temperature that the present Applicants have taught to be avoided is not persuasive. As discussed above, the examiner relied upon Higgins to teach that recycling an inhibitor for reuse is known in the art. The examiner does not modify the process of Arhancet by employing the inhibitor or the operation conditions of Higgins.

The argument that the use of a continuous operation wherein the continuity includes the recycling of a nitroxyl inhibitor presents special problems with regard to effectiveness that one does not encounter with other inhibitors such as dinitrophenols is not persuasive because Arhancet use nitroxyl inhibitor and is a continuous process operating at conditions as claimed. It would be expected that the results would be the same or similar when operating the process continually with or without the recycled step because, with the recycling step, the Arhancet distillation column is still operated with the same conditions and the same inputs of a

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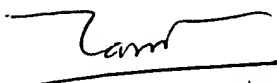
hydrocarbon feed and a nitroxyl-containing compound inhibitor as when operating the process without the recycling step.

The argument that there would be no motivation to use a mixture of two or more nitroxyls-containing inhibitors is not persuasive because the examiner maintains that one of skill in the art would use a single nitroxyl-containing compound inhibitor or a mixture of two or more nitroxyls-containing compound inhibitors because each of the nitroxyl-containing inhibitors of Arhancet has an equivalent function. Therefore, it would be expected that the mixture of the two nitroxyls would have similar results as a single nitroxyl inhibitor. It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition which is to be used for the very same purpose. *In re Kerkhoven* 205 USPQ 1069 (CCPA 1980).

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,


Tam Nguyen


8/20/05

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